

Cover

Chiral arene chromium ligands against a backdrop of the London Eye, which represents the continuous cycling of these ligands in a catalytic reaction. Photograph courtesy of Shay Goldschmidt from Herzliya in Israel (<http://community.webshots.com/user/shaygold>).



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contents

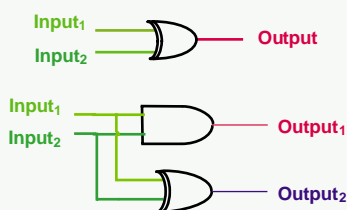
FOCUS ARTICLE

2461

Molecules that add up

Gareth J. Brown, A. Prasanna de Silva and Sara Pagliari

Development of molecular systems using chemical inputs and light output, suited to small-scale computational processing.



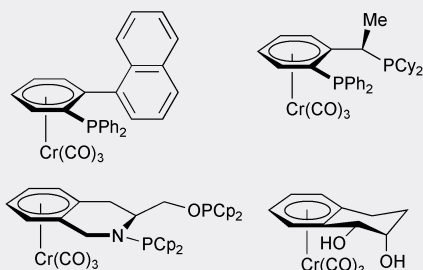
FEATURE ARTICLE

2465

Asymmetric catalysis using planar chiral arene chromium complexes

Susan E. Gibson and Hasim Ibrahim

Recent developments in the chemistry of planar chiral arene chromium complexes demonstrate that these complexes are emerging as a valuable and versatile ligand class for asymmetric catalysis.



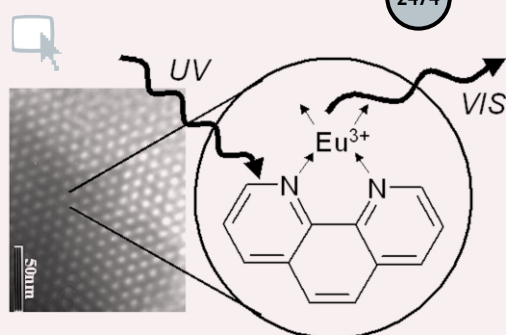
COMMUNICATIONS

2474

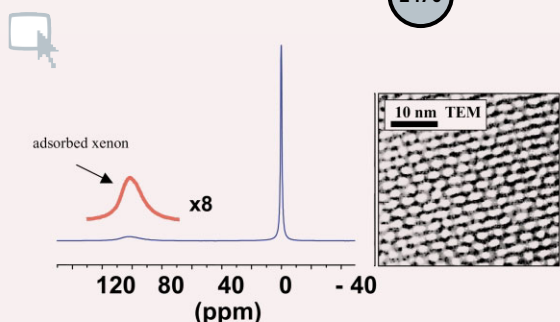
Synthesis and luminescence properties of mesostructured thin films activated by *in-situ* formed trivalent rare earth ion complexes

Michael H. Bartl, Brian J. Scott, Howard C. Huang, Gernot Wirnsberger, Alois Popitsch, Bradley F. Chmelka and Galen D. Stucky*

Complexes with trivalent rare earth ions and 1,10-phenanthroline were formed *in-situ* during syntheses of mesostructured silica thin films. This simple one-step synthesis approach results in strongly luminescent materials with high spectral purities of the emitted light.



2476

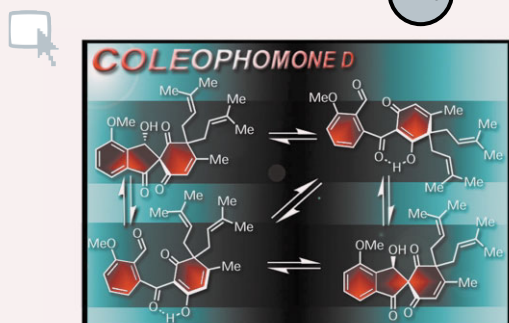


The first direct probing of porosity on supported mesoporous silica thin films through hyperpolarised ^{129}Xe NMR

Andrei Nossov, Elias Haddad, Flavien Guenneau, Claude Mignon, Antoine Gédéon,* David Grosso, Florence Babonneau, Christian Bonhomme and Clément Sanchez*

Hyperpolarized ^{129}Xe NMR spectrum of xenon adsorbed on silica mesoporous films and corresponding transmission electron microscopy (TEM) image.

2478

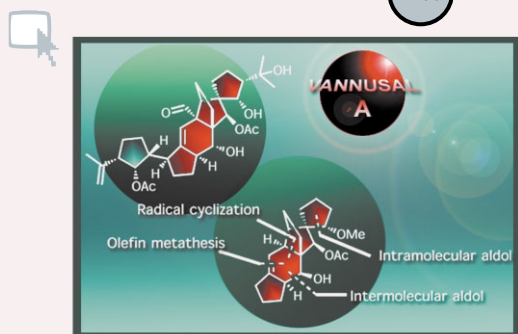


Total synthesis of coleophomone D

K. C. Nicolaou,* Tamsyn Montagnon and Georgios Vassilikogiannakis

A concise total synthesis of coleophomone D, a natural product that exists as a dynamic mixture of four isomeric compounds, by a strategy based on an acyl cyanide coupling reaction to assemble the key tricarbonyl motif, is reported.

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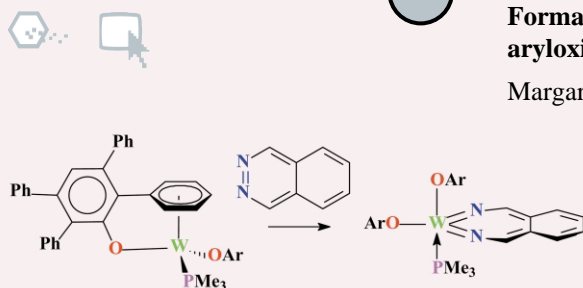


An expedient entry into the fused polycyclic skeleton of vannusal A

K. C. Nicolaou,* Michael P. Jennings and Philippe Dagneau

The synthesis of the fused polycyclic carbon framework of vannusal A is described. Key features of the synthetic strategy include inter- and intramolecular aldol reactions, a Mn(III) initiated radical cyclization, and a ring-closing olefin metathesis reaction.

2482

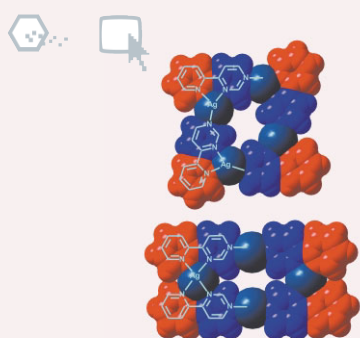


Formation of novel diaza-metallacycles by insertion of tungsten(II) aryloxides into aromatic diazine rings

Margaret R. Lentz, Phillip E. Fanwick and Ian P. Rothwell*

A novel series of metallacycles have been generated *via* insertion of a W(II) aryloxide into the N=N bond of aromatic diazines.

2484

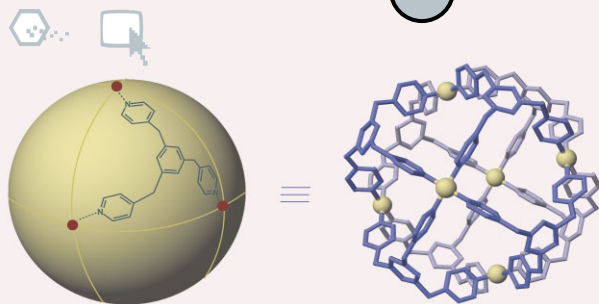


Molecular squares, rectangles and infinite helical chains utilising the simple 'corner' ligand 4-(2-pyridyl)-pyrimidine

Derek A. Beauchamp and Stephen J. Loeb*

The ligand 4-(2-pyridyl)-pyrimidine forms multinuclear Ag(I) complexes by a combination of chelating and bridging coordination modes; molecular shape (square or rectangle) and degree of aggregation depend on the anion used.

2486

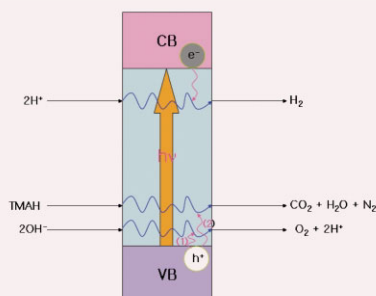


A molecular sphere of octahedral symmetry

Dillip Kumar Chand, Kumar Biradha, Makoto Fujita,* Shigeru Sakamoto and Kentaro Yamaguchi

A tridentate ligand and Pd(II) ion are quantitatively self-assembled into a molecular sphere, which has been characterized by NMR, CSI-MS, and X-ray diffraction study.

2488

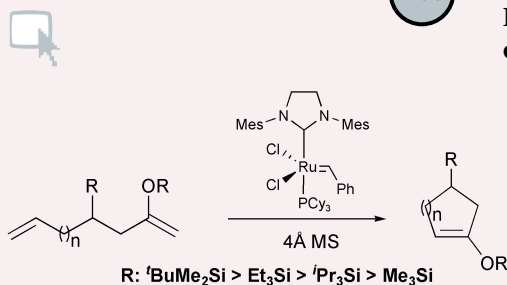


Nickel-loaded $\text{La}_2\text{Ti}_2\text{O}_7$ as a bifunctional photocatalyst

Jindo Kim, Dong Won Hwang, Hyun-Gyu Kim, Sang Won Bae, Sang Min Ji and Jae Sung Lee*

Nickel-loaded $\text{La}_2\text{Ti}_2\text{O}_7$, one of the highly donor-doped (110) layered perovskite materials, could be utilized as the bifunctional photocatalyst for simultaneous H_2 production from water splitting and decomposition of TMAH under UV irradiation.

2490

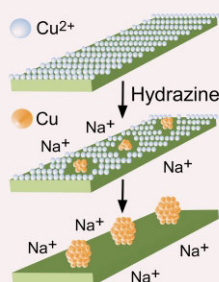


Extension of ring closing metathesis methodology to the synthesis of carbocyclic methyl and silyl enol ethers

Varinder K. Aggarwal* and Adrian M. Daly

Carbocyclic methyl and silyl enol ethers have been successfully synthesised using the second generation Grubbs ring closing metathesis catalyst. When the substrate does not bear any *gem* disubstitution along the alkyl chain, molecular sieves and the size of the silyl group, play a vital role in the success of the reaction.

2492

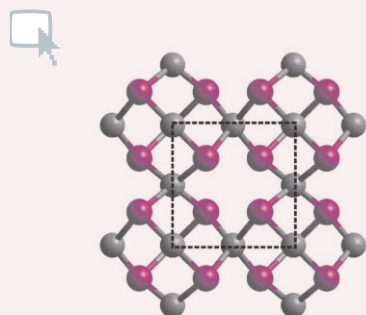


One-dimensional organization of copper nanoparticles by chemical reduction of lipid-copper hybrid nanofibers

Masaki Kogiso,* Kaname Yoshida, Kiyoshi Yase and Toshimi Shimizu

One-dimensional organization of copper nanoparticles has been achieved by chemical reduction using lipid-copper hybrid nanofibers as a template; the reduction of copper ions and the resulting formation of copper clusters occurred at intervals of 2–5 nm along the nanofibers.

2494



Solid phosphorus carbide?

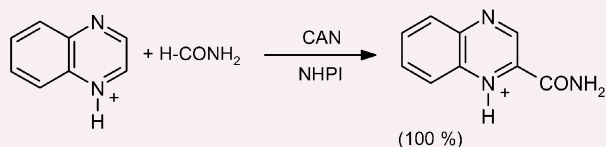
Frederik Claeysens, Neil L. Allan,* Paul W. May, Pablo Ordejón and Josep M. Oliva

Density-functional theory indicates P_4C_3 will adopt structures quite different from carbon nitride C_3N_4 with graphitic phases high in energy.

2496

A novel, selective free-radical carbamoylation of heteroaromatic bases by Ce(IV) oxidation of formamide, catalysed by *N*-hydroxyphthalimide

Francesco Minisci,* Francesco Recupero, Carlo Punta, Cristian Gambarotti, Fabrizio Antonietti, Francesca Fontana and Gian Franco Pedulli

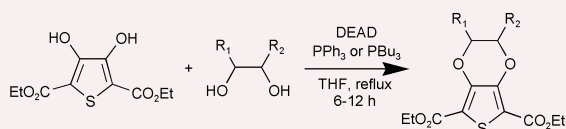


The Ce(IV)-NHPI system was used to generate a carbamoyl radical by oxidation of formamide; this nucleophilic radical has been successfully used in the carbamoylation of heteroaromatic bases.

2498

3,4-Alkylenedioxy ring formation *via* double Mitsunobu reactions: an efficient route for the synthesis of 3,4-ethylenedioxythiophene (EDOT) and 3,4-propylenedioxythiophene (ProDOT) derivatives as monomers for electron-rich conducting polymers

Kyukwan Zong, Luis Madrigal, L. "Bert" Groenendaal and John R. Reynolds*

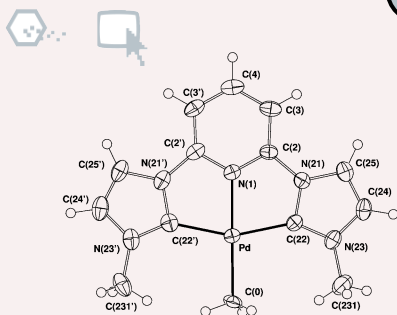


Mitsunobu chemistry has been employed as a new method for the synthesis of 3,4-alkylenedioxythiophenes as precursors to monomers for conjugated and electrically conducting polymers, including the commercially important 3,4-ethylenedioxythiophene (EDOT).

2500

Experimental and computational study of a reductive elimination mechanism in a methyl-Pd(II)-CNC carbene complex

David J. Nielsen, Alison M. Magill, Brian F. Yates, Kingsley J. Cavell,* Brian W. Skelton and Allan H. White

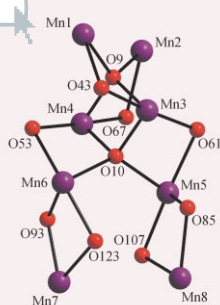


Experimental and density functional studies on the decomposition of a palladium-methyl complex of the rigid CNC ligand 2,6-bis(1-alkylimidazol-2-ylidene-3-yl)pyridine show that reductive elimination to give 2-methylimidazolium species is a facile reaction.

2502

A new synthetic method to Mn carboxylate clusters: reductive fragmentation of $[\text{Mn}_{12}\text{O}_{12}(\text{O}_2\text{CR})_{16}(\text{H}_2\text{O})_4]$ to $[\text{Mn}_8\text{O}_2(\text{O}_2\text{CR})_{14}(\text{RCO}_2\text{H})_4]$ ($\text{R} = \text{CH}_2\text{Bu}'$)

Colette Boskovic, John C. Huffman and George Christou*

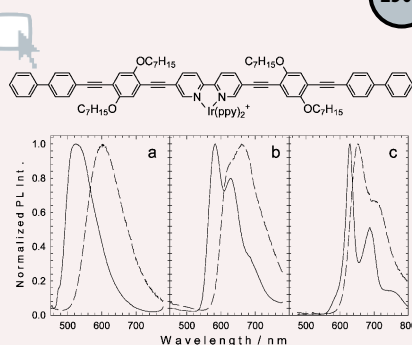


Reduction of $[\text{Mn}_{12}\text{O}_{12}(\text{O}_2\text{CCH}_2\text{Bu}')_{16}(\text{H}_2\text{O})_4]$ followed by recrystallization from $\text{CH}_2\text{Cl}_2/\text{MeNO}_2$ gives the lower-nuclearity product $[\text{Mn}_8\text{O}_2(\text{O}_2\text{CCH}_2\text{Bu}')_{14}(\text{Bu}'\text{CH}_2\text{CO}_2\text{H})_4]$. This reductive fragmentation of a large, preformed cluster represents a promising new route to clusters not available by direct synthesis.

2504

Photophysics of Ir(III) complexes with oligo(arylene ethynylene) ligands

Ksenija D. Glusac, Shujun Jiang and Kirk S. Schanze*

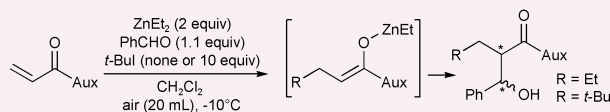


A photophysical investigation of two Ir(III) complexes that contain oligo(arylene ethynylene) ligands is reported.

2506

Tandem radical addition–aldol condensations: evidence for the formation of zinc enolates in diethylzinc mediated radical additions to *N*-enoyloxazolidinones

S. Bazin, L. Feray, D. Siri, J.-V. Naubron and Michèle P. Bertrand*

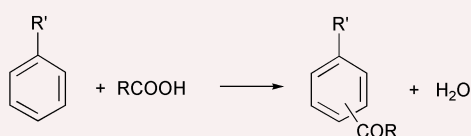


Diethylzinc/ O_2 -mediated radical additions to *N*-enoyloxazolidinones involve the formation of zinc enolates which can be trapped by benzaldehyde. This constitutes a new one-pot three component reaction which can be applied to the synthesis of γ -lactones.

2508

Efficient acylation of toluene and anisole with aliphatic carboxylic acids catalysed by heteropoly salt $Cs_{2.5}H_{0.5}PW_{12}O_{40}$

Jaspal Kaur and Ivan V. Kozhevnikov*

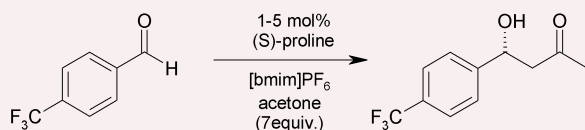


Heteropoly salt $Cs_{2.5}H_{0.5}PW_{12}O_{40}$ is a highly efficient and reusable solid acid catalyst for the liquid-phase acylation of toluene or anisole with C_2 – C_{12} aliphatic carboxylic acids.

2510

Proline-catalysed asymmetric aldol reaction in the room temperature ionic liquid [bmim]PF₆

Peter Kotrusz, Iveta Kmentová, Battsengel Gotov, Štefan Toma* and Eva Solčániová



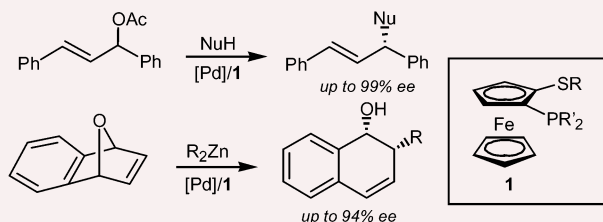
1. run: 91% yield, 73% ee
2. run: 75% yield, 67% ee
3. run: 74% yield, 63% ee

The (*S*)-proline catalyzed aldol reaction of acetone and several other ketones with different aldehydes was studied. A high yield and high ee of the product was achieved even when just 1–5% of proline was used as the catalyst.

2512

1-Phosphino-2-sulfonylferrocenes: efficient ligands in enantioselective palladium-catalyzed allylic substitutions and ring opening of 7-oxabenzonorbornadienes

Julián Priego, Olga García Mancheño, Silvia Cabrera, Ramón Gómez Arrayás, Tomás Llamas and Juan C. Carretero*

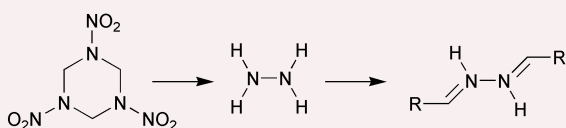


The readily available family of ligands (*R*)-**1**, possessing exclusively planar chirality, provides very high enantioselectivities in Pd-catalyzed reactions such as allylic substitutions and alkylative ring opening of 7-oxabenzonorbornadienes.

2514

The first controlled reduction of the high explosive RDX

Callum J. McHugh, W. Ewen Smith,* Richard Lacey and Duncan Graham*

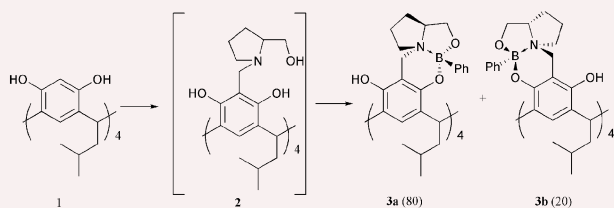


A number of methods were examined for reducing RDX. Sodium amalgam was chosen as the preferred method as it produced hydrazine, which could then be used for further derivatization.

2516

The synthesis and crystallographic structures of novel bora-oxazino-oxazolidine derivatives of resorcarene

Waldemar Iwanek,* Roland Fröhlich, Pia Schwab and Volker Schurig

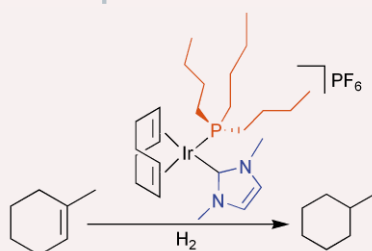


New bora-oxazino-oxazolidine derivatives of resorcarenes (**3**) from L-prolinol were synthesized by linking hydroxyl groups and the nitrogen electron pair of the aminomethylene derivative of resorcarene (**2**) by PhB(OH)_2 .

2518

Catalytic olefin hydrogenation using N-heterocyclic carbene–phosphine complexes of iridium

Leslie D. Vázquez-Serrano, Bridget T. Owens and Jillian M. Buriak*

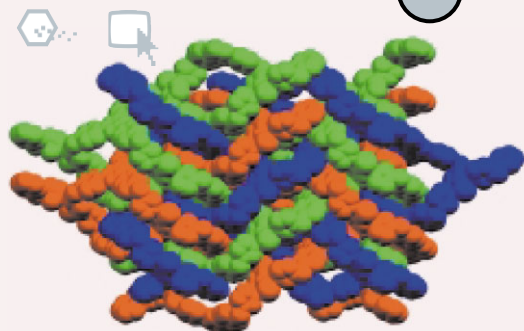


New iridium complexes based upon a heterocyclic carbene and phosphine motif have been prepared and tested for homogeneous hydrogenation catalysis. They are capable of rapid reduction of even highly hindered alkenes.

2520

2D 4.8² Network with threefold parallel interpenetration from nanometer-sized tripodal ligand and lead(II) nitrate

Shuang-Yi Wan, Jian Fan, Taka-aki Okamura, Hui-Fang Zhu, Xing-Mei Ouyang, Wei-Yin Sun* and Norikazu Ueyama

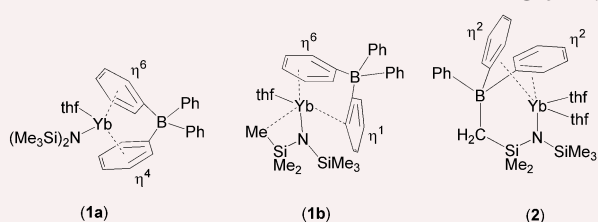


A rare 4.8² coordination network with threefold parallel interpenetration was obtained by assembly of a novel nanometer-sized tripodal ligand with lead(II) nitrate.

2522

Linkage isomerism and C–H activation in an ytterbium(II) tetraphenylborate

Glen B. Deacon* and Craig M. Forsyth



In the absence of competing donors, BPh_4^- binds to Yb(II) to give a striking pseudo-ytterbocene structure (**1a**) which isomerises *via* the π -Ph–Yb coordination giving **1b**, and also gives the remarkable silylamidoborate ligand in **2**, plausibly from C–H and B–C activation in **1**.

2524

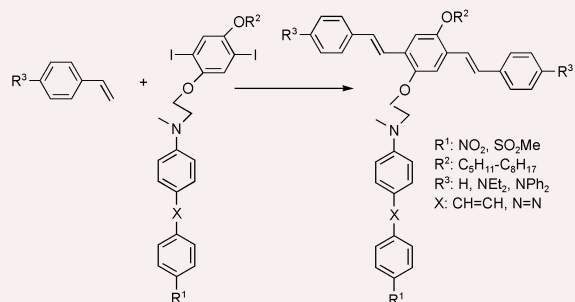
Terminal ruthenium carbido complexes as σ -donor ligands

Andrew Hejl, Tina M. Trnka, Michael W. Day and Robert H. Grubbs*



The terminal carbido ligand of the unique complex $(\text{PCy}_3)_2(\text{Cl})_2\text{RuC}$ can coordinate to other metal centers in a σ -donor fashion. For example, the reaction of $(\text{PCy}_3)_2(\text{Cl})_2\text{RuC}$ with $\text{Pd}(\text{Cl})_2(\text{SMe}_2)_2$ provides the μ -carbido product $(\text{PCy}_3)_2(\text{Cl})_2\text{Ru}=\text{C}-\text{Pd}(\text{Cl})_2(\text{SMe}_2)$. All three components of this reaction have been crystallographically characterized.

2526



Synthesis of double-conjugated-segment molecules and their application as ultra-broad two-photon-absorption optical limiters

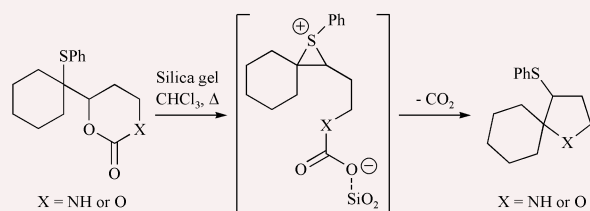
Junxiang Zhang, Yiping Cui,* Mingliang Wang and Juzheng Liu

A series of novel double-conjugated-segment molecules, in which two conjugated segments are separated by an ether chain, were synthesized; these compounds provide a very broad two-photon absorption spectral range, which satisfies an urgent need in the optical limiting area.

2528

Silica gel catalysed generation of episulfonium ions: a mild method for the synthesis of heterocycles

Lorenzo Caggiano, David J. Fox and Stuart Warren*

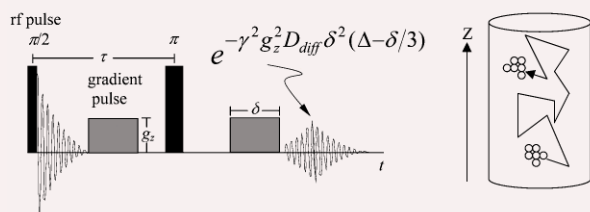


β -Carbonyloxy sulfides fragment when heated with silica or alumina to produce reactive episulfonium ion intermediates. Intramolecular activation of the leaving group and concurrent protection of a nitrogen or oxygen nucleophile *via* a cyclic carbamate or carbonate leads to the formation of pyrrolidines or cyclic ethers.

2530

Lack of evidence of dilution history-dependence upon solute aggregation in water. A nuclear magnetic resonance determination of self-diffusion coefficients

Fernando Hallwass,* M. Engelsberg and A. M. Simas

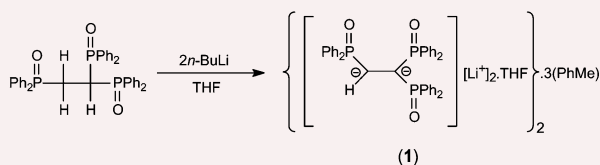


Unexpected dilution history-dependent aggregation effects, reported in *Chem. Commun.*, 2001, 2224 for aqueous solutions, were found to be inconsistent with our nuclear magnetic resonance pulsed field gradient diffusion measurements.

2532

Dilithio-1,1,2-tris(diphenylphosphinoyl)ethane-1,2-diide: the first formal 1,2-dicarbocation stabilised by phosphorus?

Keith Izod,* William McFarlane and William Clegg

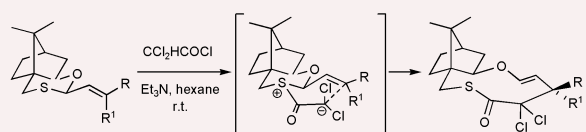


The tris(phosphine oxide) {Ph₂P(O)}₂CHCH₂P(O)Ph₂ readily undergoes deprotonation at adjacent carbon atoms to give the remarkable dimeric cluster [(THF)Li({Ph₂P(O)}₂CCH{P(O)Ph₂})Li]₂.3PhMe (**1**), after recrystallization from toluene.

2534

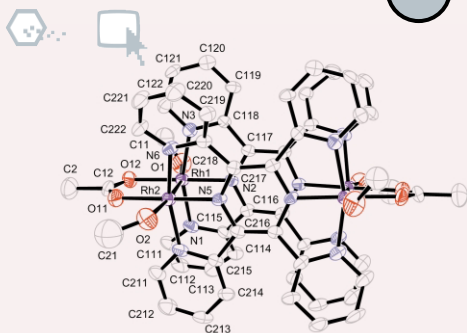
Ketene Claisen rearrangement of camphor-derived 1,3-oxathianes: complete control of tertiary and quaternary stereogenic centres

Varinder K. Aggarwal,* Alessandra Lattanzi and Daniel Fuentes



Camphor-derived 1,3-oxathianes react with dichloroketene to give macrocyclic thiolactones with complete transfer of chirality.

2536

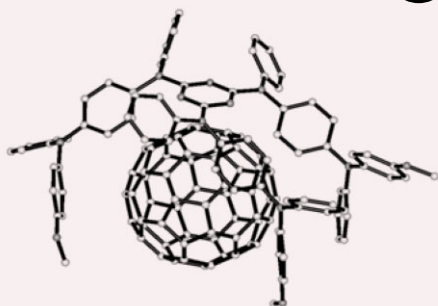


Coupling dirhodium units through terpyridine bridges: synthesis and structure of a novel molecular rectangle

Jitendra K. Bera, Cristian Saul Campos-Fernández, Clérac Rodolphe and Kim R. Dunbar*

The structure of a molecular rectangle $[\text{Rh}_4(\mu\text{-O}_2\text{CMe})_2(\text{tppz})_2(\text{MeOH})_4]^{4+}$ with edges defined by short Rh–Rh and long Rh–tppz–Rh units has been established.

2538

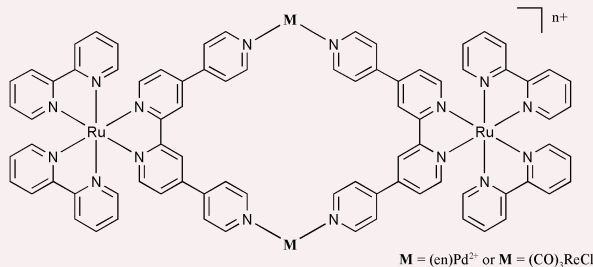


Formation and photophysics of a stable concave–convex supramolecular complex of C_{60} and a substituted *s*-triazine derivative

David I. Schuster,* Joel Rosenthal, Shaun MacMahon, Peter D. Jarowski, Christopher A. Alabi and Dirk M. Guldi*

Spectroscopic, electrochemical and computational data show that C_{60} and a highly phenylated *s*-triazine derivative form a stable supramolecular complex at micromolar concentrations in solution at ambient temperatures, due to strong van der Waals attraction between their complementary surfaces.

2540

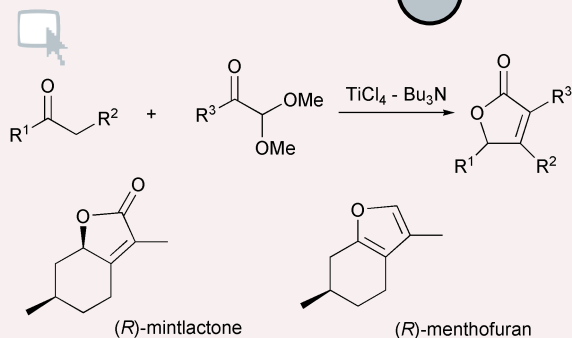


Hetero-metallomacrocyclic hosts that bind molecular guests in water

Paul de Wolf, Sarah L. Heath* and Jim A. Thomas*

The synthesis of metallomacrocycles **2** and **3** is reported. Photophysical studies indicate that energy transfer within the macrocyclic structure is efficient. While preliminary host–guest studies reveal that both **2** and **3** are hosts for specific aromatic molecules.

2542

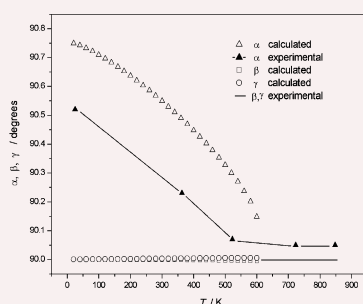


Efficient one-step synthesis of trialkylsubstituted 2(5*H*)-furanones utilizing direct Ti-crossed aldol condensation and its application to the straightforward synthesis of (*R*)-mintlactone and (*R*)-menthofuran

Yoo Tanabe,* Kumi Mitarai, Takahiro Higashi, Tomonori Misaki and Yoshinori Nishii

Trialkylated 2(5*H*)-furanones, *e.g.* (*R*)-mintlactone and (*R*)-menthofuran, were prepared utilizing $\text{TiCl}_4\text{-Bu}_3\text{N}$ mediated aldol condensation of ketones with α,α -dimethoxyketones in a one-pot manner.

2544

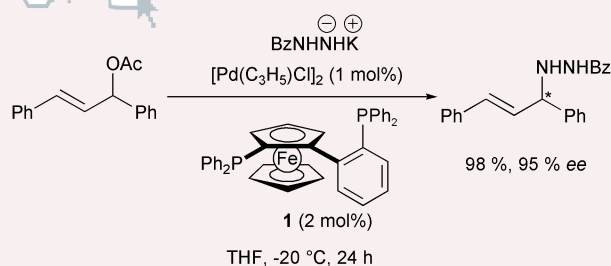


A free energy minimisation study of the monoclinic–orthorhombic transition in MFI zeolite

Ricardo Grau-Crespo,* Enrique Acuay and A. Rabdel Ruiz-Salvador

Free energy minimisation calculations of the crystal structure of the zeolite ZSM-5 are shown to reproduce the observed phase transition from monoclinic to orthorhombic symmetry.

2546

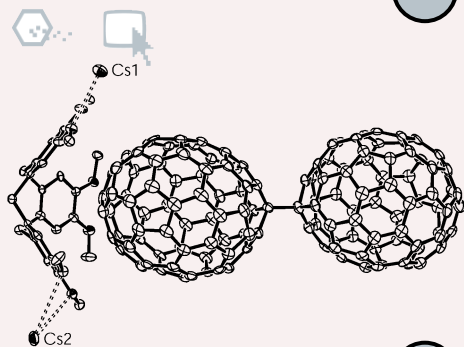


Facile axial chirality control by using a precursor with central chirality. Application to the preparation of new axially chiral diphosphine complexes for asymmetric catalysis

Matthias Lotz, Gernot Kramer and Paul Knochel*

A diastereoselective synthesis of a new chiral diphosphine with planar chirality is performed in 2 steps from (*S*)-*p*-tolylferrocenyl sulfoxide. The ligand gives enantioselectivities up to 98% *ee* in Pd(0)-catalyzed allylic substitution reactions

2548



The formation of a single-bonded $(\text{C}_{70}^-)_2$ dimer in a new ionic multicomponent complex of cyclotrimeratrylene:

$(\text{Cs}^+)_2(\text{C}_{70}^-)_2 \cdot \text{CTV} \cdot (\text{DMF})_7 \cdot (\text{C}_6\text{H}_6)_{0.75}$

Dmitri V. Konarev,* Salavat S. Khasanov, Ivan I. Vorontsov, Gunzi Saito,* Mikhail Yu. Antipin, Akihiro Otsuka and Rimma N. Lyubovskaya

Single-bonded diamagnetic $(\text{C}_{70}^-)_2$ dimers with an intercage C–C bond of 1.584(9) Å are formed in a new ionic multicomponent complex of cyclotrimeratrylene (CTV) with C_{70} fulleride: $(\text{Cs}^+)_2(\text{C}_{70}^-)_2 \cdot \text{CTV} \cdot (\text{DMF})_7 \cdot (\text{C}_6\text{H}_6)_{0.75}$. The dissociation temperature for the $(\text{C}_{70}^-)_2$ dimers was estimated to be 360–390 K.

2550

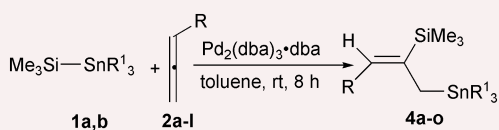


Proton-controlled inter-conversion between an achiral discrete molecular square and a chiral interpenetrated double-chain architecture

Miao Du, Xian-He Bu,* Ya-Mei Guo, Joan Ribas and Carmen Diaz

Proton-controlled reversible inter-conversion between an achiral Cu^{II} molecular square and a 1D spontaneously resolved chiral interpenetrated double-chain with Cu_4 cavities, together with their crystal structures and magnetic properties, are reported.

2552

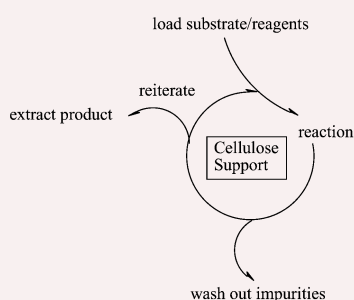


Highly regio- and stereoselective silylstannation of allenes catalyzed by phosphine-free palladium complexes

Masilamani Jeganmohan, Muthian Shanmugasundaram, Kuo-Jui Chang and Chien-Hong Cheng*

Silylstannation of allenes catalyzed by phosphine-free palladium complexes gives exclusively (*E*)-alkenylsilanes having an allylstannane moiety.

2554



The use of cellulose (chromatography paper) as a cheap, versatile and non-covalent support for organic molecules during multi-step synthesis

Stephen E. Shanahan, Douglas D. Byrne, Graham G. A. Inglis, Mahbub Alam and Simon J. F. Macdonald*

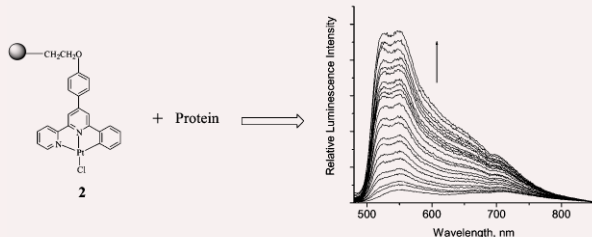
Cellulose chromatography paper provides a novel non-covalent support for synthesis and *in-situ* purification of multi-dimensional arrays.

2556

PEG-Linked luminescent platinum(II) complex as aqueous polymeric molecular light switch for protein binding reactions

Chi-Ming Che,* Jun-Long Zhang and Li-Rong Lin

Attachment of poly(ethylene glycol) (PEG) to [Pt(4-HOPh-C^{^N^N})Cl] via covalent etheric bonds gives the luminescent polymer PEG-[Pt] (**2**), the photoluminescence of which is enhanced in hydrophobic regions of protein molecules (binding constant up to 10^4 M^{-1}) in aqueous solution.

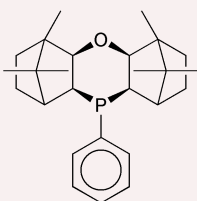


2558

Chiral pentacyclic phosphines as a new ligand class

Robert Haigh, K. M. Abdul Malik and Paul D. Newman*

A new sterically encumbered pentacyclic phosphine derived from (1*R*)-camphor has been prepared and some aspects of its coordination chemistry with palladium(II) examined. The ligand has a rigid, multichiral skeleton with eight stereogenic centres. Upon reaction with Pd₃(OAc)₆, the ligand cyclometallates generating two further stereogenic centres (one carbon, one phosphorus) stereospecifically.

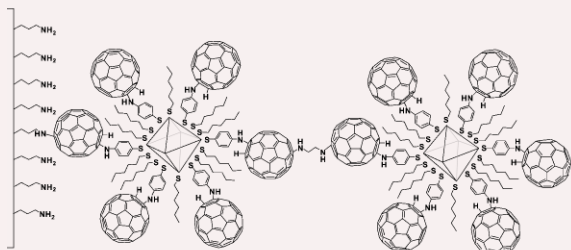


2560

[60]Fullerene-linked gold nanoparticles: synthesis and layer-by-layer growth on a solid surface

Young-Seok Shon* and Hosun Choo

The facile synthesis of soluble and isolable [60]fullerene-linked gold nanoparticles and layer-by-layer assembly of C₆₀/nanoparticle films on the solid surface were studied.

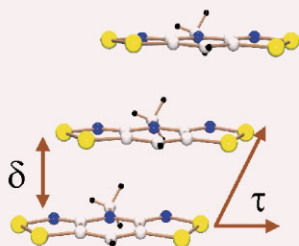


2562

Structure–property trends in π -stacked dithiazolo-dithiazolyl conductors

Leanne Beer, Jaclyn L. Brusso, A. Wallace Cordes, Erika Godde, Robert C. Haddon, Mikhail E. Itkis, Richard T. Oakley* and Robert W. Reed

The resonance stabilized dithiazolo-dithiazolyl radical adopts a slipped π -stack structure exhibiting weak 1-D ferromagnetic coupling; variable temperature conductivity measurements indicate $\sigma_{\text{RT}} = 2 \times 10^{-6} \text{ S cm}^{-1}$.

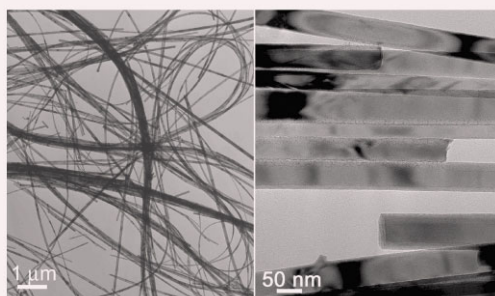


2564

Synthesis of gallium phosphide nanowires via sublimation method

Hee Won Seo, Seung Yong Bae, Jeunghee Park, Hyunik Yang and Sangsig Kim

Gallium phosphide nanowires, with mean diameter of 40 nm and length up to 300 μm , were synthesized by sublimation of ball-milled powders.

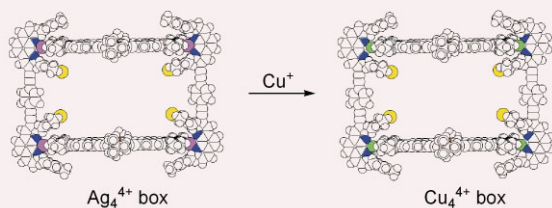


2566

Quantitative formation and clean metal exchange processes of large void (>5000 Å³) nanobox structures

Michael Schmittl,* Horst Ammon, Venkateshwarlu Kalsani, Andreas Wiegrefe and Christoph Michel

Using the HETPHEN concept a quantitative metallosupramolecular self-assembly process leading to large void nanoboxes was established. The unprecedented conversion of the Ag₄⁴⁺ → Cu₄⁴⁺ nanobox convincingly underlines the reliability, robustness and flexibility of our approach.

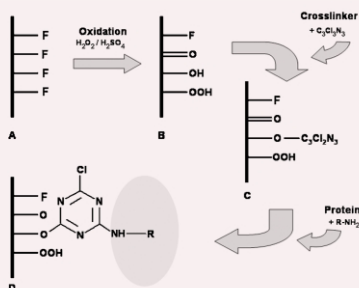


2568

Wet chemical modification of PTFE implant surfaces with a specific cell adhesion molecule

Christoph Löhbach, Udo Bakowsky, Carsten Kneuer, Dieter Jahn, Thomas Graeter, Hans-Joachim Schäfers and Claus-Michael Lehr

The surface of PTFE based implant material could be covalently functionalised with adhesion molecules for improved bio-adhesion by wet chemical oxidation to introduce hydroxy groups followed by cross-linking with cyanuric chloride.

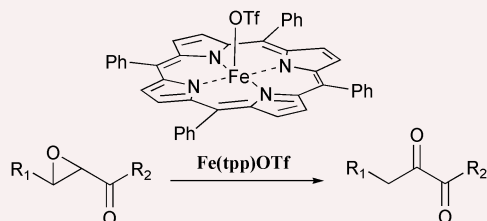


2570

High-valent metalloporphyrin, Fe(tpp)OTf, catalyzed rearrangement of α,β-epoxy ketones into 1,2-diketones

Kohji Suda,* Kenji Baba, Shin-ichiro Nakajima and Toshikatsu Takanami

Iron(III) tetraphenylporphyrin triflate, Fe(tpp)OTf, works as an efficient and characteristic Lewis acid catalyst in the selective rearrangement of α,β-epoxy ketones into 1,2-diketones.

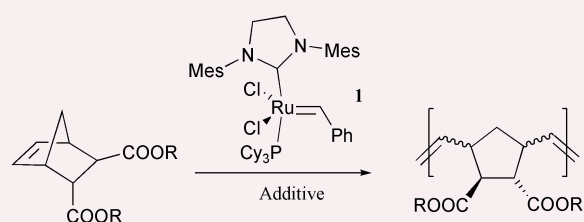


2572

Ring opening metathesis polymerisation in donor solvents

Christian Slugovc,* Sandra Demel and Franz Stelzer

A screening concerning the functional group tolerance of the 'Super Grubbs' initiator (**1**) reveals that nitriles, amines or thiocyanates do not prevent ring opening metathesis polymerisation but strongly influence polymer properties.

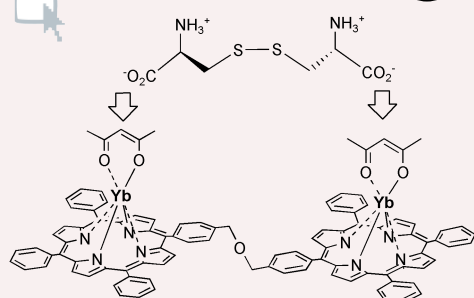
Additive: MeCN, PhCN, HNEt₃, NEt₃, pyridine, etc.

2574

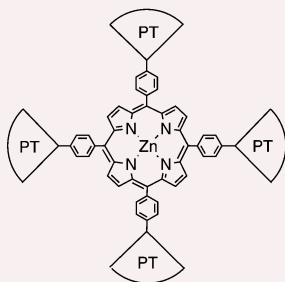
A specific receptor of biological cystine polyion: distance-selective extraction and efficient chirality sensing with an ytterbium porphyrinate tweezer

Hiroshi Tsukube,* Nobuyuki Tameshige, Satoshi Shinoda, Satomi Unno and Hitoshi Tamiaki

An ytterbium porphyrinate dimer acts as a new class of tweezer-type receptor, which offers selective extraction of biological cystine polyion and chirality sensing with circular dichroism spectroscopy.



2576

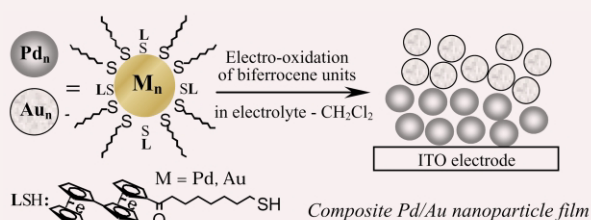


Platinum–acetylide dendrimers possessing a porphyrin core

Kiyotaka Onitsuka, Hotaka Kitajima, Masanori Fujimoto, Asako Iuchi, Fumie Takei and Shigetoshi Takahashi*

Intramolecular energy transfer from platinum–acetylide moieties to the porphyrin core was observed in novel organometallic dendrimers that were prepared from a tetra(4-ethynylphenyl)porphyrin-bridged tetranuclear platinum–acetylide core and platinum–acetylide dendrons by a convergent method.

2578



Electrochemical construction of an alternating multi-layered structure of palladium and gold nanoparticles attached with biferrrocene moieties

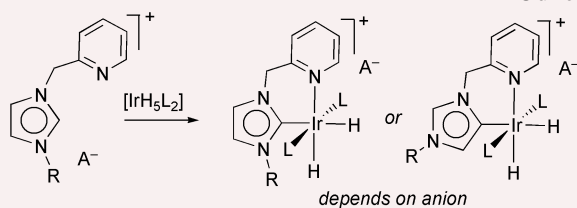
Mami Yamada and Hiroshi Nishihara*

A new convenient method for constructing novel hetero-layered films of different metal nanoparticles was developed, and a specific electrochemical behavior of hetero-layers of metal nanoparticles in acidic solution was found.

2580

Counter-ion effects switch ligand binding from C-2 to C-5 in kinetic carbenes formed from an imidazolium salt and $\text{IrH}_5(\text{PPh}_3)_2$

Anes Kovacevic, Stephan Gründemann, John R. Miecznikowski, Eric Clot,* Odile Eisenstein* and Robert H. Crabtree*

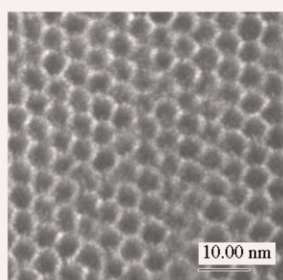


Changing the counter-anion in 2-pyridylmethyl imidazolium salts (Br , BF_4 , PF_6 , SbF_6) causes their kinetic reaction products with $\text{IrH}_5(\text{PPh}_3)_2$ to be switched from normal C-2 to abnormal C-5 binding.

2582

Nonionic oligomeric polymer directed synthesis of highly ordered large pore periodic mesoporous organosilica

Abdelhamid Sayari* and Yong Yang



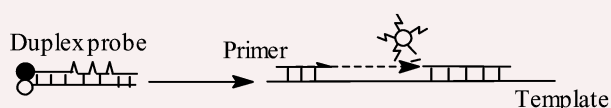
Ethane-bridged periodic mesoporous silica with large pore (5.5 nm), high surface area, and highly ordered 2D hexagonal structure has been synthesized reproducibly in high yield using nonionic oligomeric Brij 76 polymer as structure-directing agent and 1,2-bis(triethoxysilyl)ethane (BTEE) as organosilica source in acidic media at 50 °C.

2584

Simulation of TaqMan by two single-labelled probes

De-Ming Kong, Long Gu, Han-Xi Shen* and Huai-Feng Mi

A novel method for duplex probes is designed to simulate the TaqMan probe during polymerase chain reaction. In this method, two single-labelled probes are used.



2586

Biocatalytic synthesis of uridine 5'-diphosphate *N*-acetylglucosamine by multiple enzymes co-immobilized on agarose beads

Jun Shao, Jianbo Zhang, Jozef Nahálka and Peng George Wang*

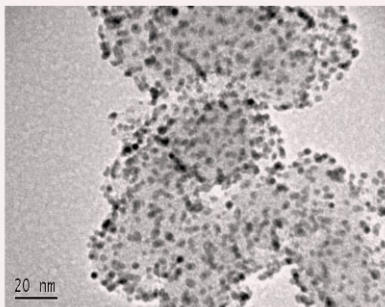


Recombinant *N*-acetylglucosamine kinase, pyruvate kinase, *N*-acetylglucosamine phosphate mutase, uridine 5'-diphosphate *N*-acetylglucosamine pyrophosphorylase, and inorganic pyrophosphatase were overexpressed in *E. coli* and co-immobilized on agarose beads for the practical synthesis of uridine 5'-diphosphate *N*-acetylglucosamine.

2588

Microwave-assisted synthesis of carbon supported Pt nanoparticles for fuel cell applications

Wei Xiang Chen, Jim Yang Lee* and Zhaolin Liu

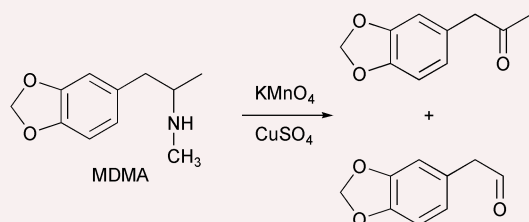


Carbon supported Pt nanoparticles were prepared by microwave irradiation. TEM images demonstrate that the Pt nanoparticles were uniform in size and shape. Electrochemical experiments showed that the Pt/C catalyst exhibited very high electrocatalytic activity for oxidation of liquid methanol.

2590

Isotopic changes during the synthesis of amphetamines

James F. Carter,* Emma L. Titterton, Helen Grant and Richard Sleeman



There is currently a great deal of interest in the use of isotopic characterisation of drugs of abuse as a means to identify their source and synthetic pathway. A comparison of amphetamines, prepared *via* reductive amination, and their precursors reveals kinetic isotope effects which result in small variations in $\delta^{13}\text{C}$ and large variations in $\delta^{15}\text{N}$. The product amphetamines, therefore, reflect the reaction conditions rather than the starting materials.

2592

Hiroshi Katagiri, Nobuhiko Iki,
Yoshiaki Matsunaga, Chizuko
Kabuto and Sotaro Miyano

'Thiacalix[4]aniline' as a highly specific extractant for Au(III) and Pd(II) ions

xvi

Dates, venues and contact details of forthcoming events.

xviii

Highlights from the 37th ESF/EUCHEM Conference on Stereochemistry, Bürgenstock, Switzerland, April 2002

Patrick Guiry and Florian Hollfelder

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